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PRODUCTION OF NYLON 6

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Abstract of JP62252426

PURPOSE: To facilitate the production of nylon 6 of a desired crystalline structure (alpha or gamma-form), by polymerizing a monomer for nylon 6 in the presence of a silicate at a temperature higher than the melting point of the monomer and cooling the product at a specified cooling rate.

CONSTITUTION: 100pts.wt. monomer (A) for nylon 6 (e.g., caprolactam) is polymerized in the presence of 0.001-100pts.wt. silicate (B) (e.g., montmorillonite), desirably, swollen with an organic substance (e.g., 12-aminododecanoic acid hydrochloride) at a temperature higher than the melting point of component A (about 220 deg.C), and the product is cooled at a cooling rate ≤ 4 deg.C/min from the melting point or above to 160 deg.C or below to obtain a composite of nylon 6 of an alpha crystalline structure with the silicate or cooled at a cooling rate ≥ 10 deg.C/min to obtain a composite of nylon of a gamma crystalline structure. This composite is dissolved in a solvent (e.g., m-cresol), and the silicate is removed to obtain nylon of an alpha or gamma crystalline structure.

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